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U. S. Department of Agriculture

*An Important***ANNOUNCEMENT***on***OAT SMUTS***Advance information**and prices on***FALL GRAINS***for 1943***COKER'S PEDIGREED SEED CO.***The South's Foremost Seed Breeders***Hartsville, South Carolina**

## *The Life of a Plant Breeder*

For the past 41 years our Company has been engaged in producing improved varieties of our principal southern farm crops through scientific plant breeding. The results of these efforts have been reflected in the increased yields and quality of the cotton, tobacco, corn, wheat, rye and oat crops over a substantial area of the southern states.

The life of a plant breeder is an interesting one—it is encouraged by the occasional discovery of outstanding plant families of great merit and almost limitless possibilities; it is enriched by the knowledge of the fundamental contribution that the superior strains and varieties are making to the wellbeing of agriculture and the millions dependent thereon; it has its joys and sorrows and to walk hand in hand with nature and to live with and study the functioning of the supreme law of heredity, as a plant breeder does, is a profoundly humbling experience, and is an inspiration and yet a challenge to his character and fortitude.

Among the heartbreaking disappointments which the plant breeder must experience is the discovery of new plant diseases which adversely affect his hitherto disease-resistant varieties and when this occurs, a breeder should promptly announce this discovery, and marshal his forces to defeat this new enemy through the same breeding processes by which so many others have been successfully overcome.

In the accompanying article, Mr. George J. Wilds, President of our Company, tells the story, fully and frankly, of one of these disappointing discoveries.

—*Coker's Pedigreed Seed Company.*



# NEW OAT SMUTS

## A SERIOUS PROBLEM

By GEORGE J. WILDS  
*President*

**Discovery of New Races Which Affect Many Standard Smut Resistant Varieties Complicate Breeders' Problems and Make Ceresan Treatment of All Oat Varieties Advisable Regardless of Previous Record of Smut Resistance.**

Breeding for smut resistance is a most vexing, complex, and hazardous undertaking. A variety may be resistant to all known races, then along comes a new race that infects it as badly as if it had not been bred for smut resistance. While we are crossing and breeding for smut resistance, the smuts are doing likewise in an apparent effort to tear down that which we have so laboriously and painstakingly built up.

Our Fulgrain Strains 1, 2 and 3 were highly resistant to all known races of smut in the United States. Tests were made at seventeen widely scattered Experiment Stations, sixteen of these in the United States and one in Canada. Each experimenter used the race or races that were prevalent in his section, and only in Madison, Wisconsin, was there any infection, and that less than six percent.

### **Fulgrain Smut Discovered**

In 1938 smut appeared in a Fulgrain field near Leesville, South Carolina. It was reported by Mr. Harold Epting. We investigated and found that it was pure Fulgrain and smutting badly. We collected a large amount of this smut, and since that time, have been planting three separate smut inoculation tests, in one using the Fulghum race, in another Red Rust Proof or Appler, and in the third using the Fulgrain race. We found all Fulgrain strains prior to Strain 4 highly susceptible to this Fulgrain

race, as well as Coker 33-50, all Red Rust Proof strains, and the three recently bred rust and smut resistant Texas oats, Rustler, Ranger and Rangler.

### **Virulent New Race Develops in Oklahoma**

Dr. Stanton, Senior Agronomist in Charge of U. S. D. A. Oat Investigations, while on an inspection tour in Oklahoma, made a collection of smut out of a Fulghum field. This was forwarded to Dr. Geo. M. Reed, Curator, Brooklyn Botanic Garden, a world authority on smut. He tested a large number of varieties and strains with this new race and we oat breeders found, to our great disappointment, that many hitherto highly resistant varieties were susceptible to this particular race, which he designates Avena-30.

### **New Oat Strains May Have Resistance to New Smuts**

The most serious setback was received when Dr. Reed discovered that Victoria—which had been considered smut immune—was highly susceptible to this new race; furthermore, that all the new highly smut and rust resistant strains and varieties that derive their smut resistance from Victoria, were likewise susceptible. Among these were all Stanton strains and Letoria, Lelina, Lelate, Lega, DeSota, Fultex, and most Victorgrain strains; however, Victorgrains 42-3 and 42-5 (that are in 10-acre increase) and Fulgrain 4 and strains descended therefrom, showed the highest degree of resistance.

### **Victorgrain Smut Shows Up in Spring of 1943**

This year, for the first time, an apparently new race has appeared to which Victorgrain Strains 1, 2 and 3 are susceptible. We were inclined to believe at first that this was Avena-30—as the strains of Fulgrain and Victorgrain that Dr. Reed designated as susceptible, showed smut, and all but one of those that he reported as resistant, showed no smut—were it not for the fact that all Stanton strains so far show absolute freedom from smut and all of these were highly susceptible to Avena-30.



This discovery would have left us in a serious predicament had not Dr. Reed come to our aid. Immediately on finding the prevalence of this smut in Victorgrain, we collected inoculum and forwarded to him dehulled seed of all our oat strains, with the request that he make an outdoor planting using the inoculum that we had forwarded in one test, and a duplicate test using Avena-30. He kindly consented to do this, and in the meantime, we will save all promising strains and await his report on these tests before final selections are made. Those strains will be favored that show uniformly high resistance.

### **Ceresan Treatment Essential Regardless of Previous Record of Smut Resistance**

We will continue to breed for resistance to all races of smut in our usual thorough manner but in light of these recent discoveries, we feel that, *regardless of past history and experience, it is too hazardous to use planting seed, regardless of variety, without first treating for smut control.* Consequently, we are going to treat all planting seed offered this year with Ceresan. This includes Victorgrain Strain 3, Fulgrain Strain 6 and Stanton Strain 1, even though Fulgrain Strain 6 has shown no susceptibility to any race and no smut infected plants have so far been found in any of our Stanton increase fields. *We want to urge that our friends and customers do likewise,* and so advise this necessary precaution to all growers or sellers of oats to be used for planting purposes. The benefits derived from Ceresan treatment, other than smut control, far exceed the small cost.

### **Victorgrain Smut Loss This Year Negligible**

We wanted to advise our customers promptly of this new race. While all possible loss from smut in Victorgrain this year is negligible, if the seed grown from this crop were planted this next year without first treating for smut control, the loss might be serious—and *this* so unnecessary and easily averted.

# **COKER'S PEDIGREED VICTORGRAIN OATS**

## **STRAIN 3**

**A New, Higher Yielding Strain of One of the South's  
Leading Oat Varieties.**

It is not reasonable to expect a plant breeder, regardless of the quality of his work or the volume of material he works with, to produce a radically different or strikingly superior new strain of his standard varieties year in and year out. Therefore, for our Victorgrain new Strain 3, we do not claim any remarkable improvement over its parent, Strain 2. The type and general appearance is the same and the good qualities of the Victorgrain variety, namely stiffness of straw, high resistance to leaf rust and resistance to certain types of smut, have been maintained and the records of our breeding and test plots show a somewhat higher production than previous strains.

Victorgrain Strain 3, on average soils and with average seasons, produces a plant of medium height—tall enough for ease of combining and short enough to eliminate excess straw and give added storm resistance.

### **Not Recommended for Poor Soils**

We do not recommend the planting of Victorgrain oats on poor soil or in areas where late spring drouths are common, where this oat would not grow sufficiently tall for satisfactory harvesting.

Victorgrain Strain 3 is deceptive in appearance. In breeding, the emphasis has been on production of quality grain and disease resistance, but the true test of value is the yield per acre of superior live-stock feed and Victorgrain has demonstrated this on thousands of southern farms.

### **Successfully Grown Under Wide Range of Conditions**

The considerable cold resistance of Victorgrain combined with its high degree of resistance to leaf rust and medium early maturity, makes it possible to grow this variety successfully under wide range of conditions and over sizeable territory. Reports on its satisfactory performance have been received from growers from southern Virginia to north Florida and from southern Missouri to Texas. The heads are long and well balanced; the grains are attractive and bright, resisting weather stain. The plump, well-filled berry is high in feeding value with a low percentage of hull.



Victorgrain Strain 3 is of medium maturity, ripening about a week earlier than Red Rust Proof and some three to five days later than Fulgrain.

**PRICES:**    1 to 12 bushels .....\$5.00 per bu.  
                  12 to 48 bushels .....\$4.75 per bu.  
                  Above 48 bushels .....\$4.50 per bu.  
                  All Oats and Wheat treated with Ceresan.

# **COKER'S PEDIGREED FULGRAIN OATS**

## **STRAIN 6**

**A New, More Uniform Strain with Higher Yield Record  
Best of the Fulgrains**

In Coker's Fulgrain Strain 6, we have been able to virtually eliminate the occasional beards or awns which have been noted in earlier strains. It has made the best yield record of any Fulgrain oat we have ever bred or tested, and combines early maturity with a stiff, storm resistant straw and a high degree of resistance to leaf or crown rust.

### **Long and Well Balanced Heads**

Fulgrain Strain 6 is somewhat taller than Fulgrain Strains 4 and 5 and about 90% as tall as Fulgrain Strain 3. The heads are long and well balanced and the grains are beautiful, plump, heavy and of high feeding value.

In addition to its satisfactory showing in our increase fields and tests here, the parent strain of Fulgrain Strain 6 came second in the 1940 Delta Experiment Station Variety Test with a yield of slightly over 90 bushels per acre and led all varieties in the 1941 Variety Test of the North Louisiana Experiment Station at St. Joseph, La., with a yield of 93.5 bushels.

### **Uniform in Type**

As a result of the ten years of selection and testing which have gone into the breeding of this oat, it is remarkably uniform in type and appearance with profuse tillering and has so far shown resistance to all types of smut yet discovered.

Strain 6 is our first strain of Fulgrain oats which compares favorably in yield with Victorgrain and this is, in our opinion, a significant indication of its value.

**PRICES:**    1 to 12 bushels .....\$5.00 per bu.  
                  12 to 48 bushels .....\$4.75 per bu.  
                  Above 48 bushels .....\$4.50 per bu.  
                  All Oats and Wheat treated with Ceresan.

# COKER'S PEDIGREED STANTON OATS

## STRAIN 1

**A Rather Tall Growing, Cold and Leaf Rust Resistant Variety Suitable for Grain, Hay or Green Feed.**

Coker's Stanton oat is of medium late maturity and is highly resistant to cold, leaf rust and most races of smut. It combines features that make it attractive to livestock feeders and dairymen. It makes a profuse leaf growth; grows rather tall and provides more green feed, more hay or a greater tonnage of ensilage per acre.

### **Better Yields of Grain and Rust-Free Forage**

Stanton is a heavy yielder of grain, as well as hay, and its resistance to rust and smut helps produce bigger yields of cleaner grain and rust-free forage. An oat which produces plenty of straw, as well as good yields of grain, is also desirable as livestock feeders have a use for their oat straw for bedding.

The early plant growth is of the low spreading winter type, with profuse tillering and long, fine blades. Stanton is a week later than Victorgrain in maturity (about the same as Red Rust Proof), has long, well balanced heads and a medium-stiff straw for an oat of its height. The grains are bright to rich yellow in color, a few with awns or beard.

### **High Yield Record in North Carolina Tests**

Stanton made the highest average yield of any variety included in all five of the 1942 official N. C. Oat Variety Tests. In these tests, which were conducted in five localities extending from the mountains to the Lower Coastal Plain, Stanton made an average yield of 89.7 bushels per acre against an average of 85.6 bushels for the next highest yielding variety.

In the three tests (Southern Piedmont, Southern Coastal Plain and Lower Coastal Plain), in which all three oats were included, Stanton produced an average yield of 90.8 bushels per acre against 79.5 bushels for Lelina and 77.2 for Letoria.

### **Especially Well Suited for Piedmont Section**

Coker's Stanton oats are showing up especially well in the Piedmont areas of North and South Carolina and Georgia. Its cold resistance and extra vigor enable it to make a satisfactory winter growth under the exacting weather and soil conditions of this area.

**PRICES:**    1 to 12 bushels .....\$3.00 per bu.  
              12 to 48 bushels .....\$2.75 per bu.  
              Above 48 bushels.....\$2.50 per bu.

All Oats and Wheat treated with Ceresan.



# **COKER'S HARDIRED WHEAT**

## **STRAIN 3**

**A Variety with Considerable Cold and Leaf Rust Resistance, High Resistance to Mildew, Profuse Stooling and Good Production Record—Widely Adapted.**

Coker's Hardired Strain 3 is our third and newest strain of a new wheat variety first introduced in the fall of 1940. Backed by eleven years of plant breeding effort, Strain 3 is showing a marked degree of uniformity and a consistent record of satisfactory production.

This wheat grows somewhat taller than Redhart, and consequently, its storm resistance is not as great. Although we have never suffered any loss of this variety on our farms from lodging, we do not recommend it for planting on heaviest types of soil, high in organic matter or nitrogen content.

### **Strain 3 Best Hardired**

Hardired Strain 3 has made the highest average yield record of either of the other two Hardired Strains, in our tests here, and its parent strain led all commercial varieties in the 1942 N. C. Wheat Performance Trials in an average of all five tests conducted. In the 1941 South Carolina Three-Acre Wheat Contest, Hardired made the highest yield record of any variety planted, with an average yield of 33.56 bushels and winning both the first and second state prizes with a yield of 56.5 and 55.73 bushels per acre respectively.

It is an excellent stooling wheat, has considerable cold resistance, is resistant to the early types of rust and highly resistant to mildew damage.

### **Well Filled Heads — High Milling Value**

Hardired Strain 3 is of medium maturity, ripening about a week to ten days later than Redhart Strain 5 and about one week earlier than Leap's Prolific, Forward and Fulcaster. The heads are long, square and well filled with grain of high milling value.

We have received good reports from most of the southeastern states on this variety which attest its wide adaptability and satisfactory performance under varying conditions.

**PRICES:**    1 to 12 bushels .....\$5.00 per bu.  
                  12 to 48 bushels .....\$4.75 per bu.  
                  Above 48 bushels .....\$4.50 per bu.  
                  All Oats and Wheat treated with Ceresan.



# **COKER'S**

## **REDHART WHEAT**

### **STRAIN 5**

**A Variety with Stiff Straw, Extra Early Maturity  
and High Production.**

Because of an insistent demand by a number of our customers who are partial to Redhart wheat because of its dependable production, we have increased and are again offering our Redhart Strain 5.

#### **Fourth Improvement on Original Strain**

Redhart Strain 5 is our fourth improvement on the original Redhart strain of wheat first offered by our Company 22 years ago. It is very similar both in type and appearance to Redhart Strain 4 from which it came but has made a better yield record and has shown a higher degree of uniformity. It is a week earlier than Strain 1, from two to three weeks earlier than Forward Leaps Prolific and Fulcaster, and a week earlier than Blue Stem and Gasta.

#### **Heads Erect, Compact and Beardless**

Redhart Strain 5 has a strong, stiff straw and stands up well under unfavorable weather conditions. The heads stand erect, are beardless and square with four full rows of grain. The glumes fit snugly over the grains and reduce loss from shattering.

The plant is erect in type, broad leafed, good stooling and medium dwarf in height. The grains are plump and of high milling value.

**PRICES:**    1 to 12 bushels .....\$4.00 per bu.  
                  12 to 48 bushels .....\$3.75 per bu.  
                  Above 48 bushels .....\$3.50 per bu.  
                  All Oats and Wheat treated with Ceresan.

# Fall Grain Price List and Order Blank

## 1943 SEASON

Date \_\_\_\_\_ 194\_\_\_\_\_

Name \_\_\_\_\_

Address \_\_\_\_\_ R. F. D. No.  
or Street  
Address \_\_\_\_\_

Shipping Address \_\_\_\_\_ Shipping Date \_\_\_\_\_

SHIP BY FREIGHT (    )      EXPRESS (    )      PARCEL POST (    )

| NO.<br>BUSHELS | VARIETY                              | PRICE PER BUSHEL |              |                 | AMOUNT |  |
|----------------|--------------------------------------|------------------|--------------|-----------------|--------|--|
|                |                                      | 1-12<br>BU.      | 12-48<br>BU. | ABOVE<br>48 BU. |        |  |
|                | Coker's Victorgrain Oats<br>STRAIN 3 | \$5.00           | \$4.75       | \$4.50          |        |  |
|                | Coker's Fulgrain Oats<br>STRAIN 6    | 5.00             | 4.75         | 4.50            |        |  |
|                | Coker's Stanton Oats<br>STRAIN 1     | 3.00             | 2.75         | 2.50            |        |  |
|                | Coker's Hardired Wheat<br>STRAIN 3   | 5.00             | 4.75         | 4.50            |        |  |
|                | Coker's Redhart Wheat<br>STRAIN 5    | 4.00             | 3.75         | 3.50            |        |  |
|                |                                      |                  |              |                 |        |  |
|                |                                      |                  |              |                 |        |  |
| TOTAL          |                                      |                  |              |                 |        |  |

All oats bagged in even weight four bushel bags; all wheat and rye in two bushel bags. Prices F. O. B. Hartsville, S. C., and Memphis, Tenn. All shipments made direct from Hartsville.

### COKER'S PEDIGREED SEED COMPANY

THE SOUTH'S FOREMOST SEED BREEDERS  
HARTSVILLE, S. C.

# Fall Grain Prices and Other Items 1912-1913

Ad

SHIP BY FREIGHT

|                                       |      |      |
|---------------------------------------|------|------|
| Coker's Victor Grain Oats<br>STRAIN 3 | 5.00 | 5.00 |
| Coker's Pulp Grain Oats<br>STRAIN 6   | 4.75 | 4.75 |
| Coker's Station Oats<br>STRAIN 1      | 4.50 | 4.50 |
| Coker's Hard Red Wheat<br>STRAIN 5    | 4.00 | 4.00 |
| Coker's Red Hard Wheat<br>STRAIN 5    | 4.00 | 4.00 |

all our goods on weight for  
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 page Prices R. O. S. Nashville S. C.

Coker's Pedigreed Seed Company  
 THE SOUTH'S FINEST SEED BREED  
 NASHVILLE, S. C.



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*The South's Foremost Seed Breeders*

HARTSVILLE, S. C.







